

Artur SOGOMONYAN

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EDUCATION

Data Science — *Master of Science* 2022 – 2025
Technische Universität Wien, Austria

Information technologies and telecommunications — *Bachelor of Science* 2014 – 2020
Bauman Moscow State Technical University
Diploma thesis “3D printer failure detection system based on computer vision detection”

WORK EXPERIENCE

CTO & Data Scientist — *susteam* JAN 2023 – FEB 2025

- Architected and built automated ESG analytics platform from scratch, engineering multi-stage pipeline with OCR and RAG-augmented LLMs for greenwashing detection
- Developed a full-stack solution of scalable AWS microservices architecture with React frontend, increasing data processing throughput by 60%
- Delivered market-ready product automating sustainability reporting for hospitality clients, providing explainable AI-driven insights

FastAPI, AWS, React, OCR, LangChain, BERT, LLaMA3, RAG

Research Scientist — Rail4Future — *Technische Universität Wien* FEB 2024 – JUL 2024

- Optimized LSTM-based digital twin for rail infrastructure, improving prediction accuracy by 27% and reducing training time by 40% for Siemens and ÖBB
- Implemented rigorous statistical validation frameworks establishing new standards for model robustness in production
- Refactored and modularized codebase enabling faster experimentation cycles and reliable deployment

Python, TensorFlow, LSTM, Statistical Analysis, Digital Twins

Machine Learning Analyst — *GLOSAV* FEB 2021 – JUL 2021

- Developed a computer vision pipeline for obstacle detection and tracking on railway routes using YOLOv5 and OpenCV.
- Achieved sub-5ms latency on real-time streams by optimizing frame processing and inference pipelines.
- Enhanced detection stability through custom temporal smoothing and calibration algorithms.

Python, YOLOv5, OpenCV, NumPy

Freelance & Linwood — *Full-Stack Developer* MAR 2017 – SEP 2019

- Designed, implemented, and deployed full-stack web applications for e-commerce and educational platforms.
- Optimized page load times and database queries, improving performance by up to 40%.
- Delivered complete front-end redesigns and backend extensions for clients using modern frameworks.

Python, Django, PHP, Yii2, React, JavaScript, HTML/SCSS, PostgreSQL

Frontend Developer — *KRK Group* SEP 2019 – DEC 2019

- Implemented user interfaces and database communication for an internal learning platform.
- Collaborated with backend developers to ensure responsive, accessible, and scalable front-end components.

React, JavaScript, REST APIs

SKILLS

Software Development	Machine Learning	Databases and Cloud	Languages
<ul style="list-style-type: none">• Docker, Git• Python, C++, R• Django, Flask, FastAPI• JavaScript, TypeScript• React, Svelte	<ul style="list-style-type: none">• scikit-learn• Pandas, NumPy• Tensorflow, PyTorch• OpenCV, YOLO• NLTK, SpaCy• Bert, LLama3, GPT• LangChain, LlamaIndex• Anthropic agents, MCP	<ul style="list-style-type: none">• PostgreSQL• MongoDB• Redis• RabbitMQ• nginx, Unicorn• Spark• AWS EC2, S3• Linux/Debian/Fedora	<ul style="list-style-type: none">• English (C1)• German (A2)• Russian (C2)• Armenian (B2)

PROJECTS

LawSynchr — *AI-Powered Legal Analytics Platform*

AUG 2024 – PRESENT

- Architected and developed an AI-powered legal research platform that transforms complex legal documents into actionable insights using Retrieval-Augmented Generation (RAG)
- Implemented advanced document processing pipeline with semantic search capabilities, enabling lawyers to quickly find relevant case law and legal precedents
- Built end-to-end full-stack MVP with responsive Svelte frontend and Flask backend, delivering intuitive user experience for legal professionals
- Developed comprehensive investor pitch deck and business strategy, positioning the platform at the intersection of legal tech and generative AI

RAG, LLM, Flask, Svelte, Semantic Search, Legal Tech, AI

Arterra — *Portfolio Website Development*

Aug 2024

- Designed and developed a portfolio website, integrating CI/CD pipelines for seamless updates via GitHub Pages.
- Utilized Obsidian vault data to create an interactive front-end that visualizes my professional journey using graphology and sigma libraries.

Svelte, graphology, sigma

TradeBot — *Crypto Trading Analysis and Future Trading*

Jun 2024

- Engineered a bot to systematically scrape and collect trade data from Binance, allowing detailed real-time market analysis.
- Designed and implemented a robust trading strategy, optimizing both short-term gains and long-term trends.

asyncio, FastAPI, BinanceAPI, pandas, mplfinance

DAVU Project TU Wien — *Document Analysis and Optical Character Recognition (OCR)*

Jun 2024

- Conducted layout analysis of historical documents to improve text extraction accuracy.
- Integrated NER and fine-tuned LLaMA-3 for metadata extraction, enhancing accuracy in identifying dates, locations, and photographers.

Tesseract, SpaCy, LLaMA-3, Python

Cryptex — *Full-stack Development of NFT Platform*

Feb 2024

- Implemented a secure authentication system using MetaMask and Polygon blockchain for managing encoded NFTs.

Svelte, Polygon, Solidity

Coding Austria — *Lip Reading App at Hackathon*

Jul 2023

- Built a lips-reading app using the AV-HuBERT model for the Austrian Red Cross challenge, enabling communication in noisy environments.

AV-HuBERT, FastAPI, Next.js

AWARDS

AI Mission Hackathon 3 — “Nightwalkers” — *1st Place Winner*

Oct 2025

- Won 1st place by developing a sophisticated multi-tool AI agent that autonomously answered complex sustainability questions, achieving over 70% accuracy on database and Wikipedia queries through iterative testing and prompt refinement.
- Architected a robust agentic system with five custom MCP servers for SQL databases, Wikipedia, PDF retrieval, currency conversion, and a Python-powered calculator to ensure precise arithmetic and data handling.
- Engineered a battle-tested QA system, which not only retrieves answers, but provides the sources (links, pages, database)

Claude Sonnet, Python, Model Context Protocol (MCP), SQL, FastMCP, Ragie, Wikipedia API

AIM Hackathon — TIMETOACT Group — *2nd Place Winner*

Oct 2024

- Developed a Retrieval-Augmented Generation (RAG) platform to identify greenwashing in ESG reports, assigning trustworthiness scores and providing explainable insights.

LangChain, OpenAI, FAISS, Python, Flask

Tourism Technology Hackathon — *2nd Place Winner*

Nov 2023

- Created an interactive knowledge graph and chatbot that analyzes tourism data and visualizes points of interest on a map.

Selenium, GeoPandas, Folium

STUDIES AND PUBLICATIONS

Publication — *IEEM24-F-0298*

2024

Comparative Analysis of Machine Learning-based Surrogate Modeling Approaches for Multi-body Dynamic Simulation in Railway Digital Twin Platform

Moscow Institute of Physics and Technology — *Deep Learning School*

2020 – 2021

Higher School of Economics University and Yandex — *School of Data Analysis*

2020 – 2020